

AGENDA

UBC COMMISSION STRUCTURAL ADVISORY COMMITTEE

ELECTRONIC MEETING

June 3, 2021 3:00 pm

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1. Roll call
2. Approve the minutes from the May 6, 2021 meeting
3. Review current amendments for structural sections
4. Review recommendation for Section 3001.2
5. Start the review of the structural portion of the 2021 IRC

Next Scheduled Meeting: July 1, 2021

Please call Sharon at 530-6163 or email ssmalley@utah.gov if you do not plan on attending this meeting.



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MINUTES

UTAH
UNIFORM BUILDING CODE COMMISSION
STRUCTURAL ADVISORY COMMITTEE
MEETING

May 6, 2021 3:00

CONVENED: 3:02

ADJOURNED

STAFF:

Steve Duncombe, Bureau Manager
Sharon Smalley, Board Secretary

COMMITTEE MEMBERS:

Jeremy Achter
Oliver Burt
John Saunders (excused)
Tyler Wright

Michael Buehner
Josh Blazzard, Commission Liaison
Patrick Tomasino

VISITORS:

MINUTES

A motion was made by Jeremy Achter to approve the minutes from the February 4, 2021 meeting as written. The motion was seconded by Patrick Tomasino and passed unanimously.

REVIEW CHAPTER 22 AND 16 OF
THE 2021 IBC

Josh Blazzard gave his review of Chapter 22 and reported most of the changes were for clarification. A motion was made by Patrick Tomasino to make a recommendation to accept the changes as presented. The motion was seconded by Jeremy Archter and passed unanimously.

Jeremy Achter gave his review of Chapter 23 and reported that he did not find any significant changes. A motion was made Jeremy Achter to make a recommendation to accept the changes in Chapter 23. The motion was seconded by Patrick Tomasino and passed unanimously.

Tyler Wright gave his review of Chapter 16. He pointed out that the change in Section 1604.5 will have a cost increase.

Oliver Burt gave his review of the sections of Chapter 16 he was assigned. He found no significant changes.

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Uniform Building Code Commission
Structural Advisory Committee
May 6, 2021

Michael Buehner gave his review of the sections of Chapter 16 he was assigned. There were no changes in the sections he reviewed.

Josh Blazzard gave his review of the sections of Chapter 16 he was assigned. He reports that some the changes were to bring the requirements in line with the ASCE requirements.

REVIEW CURRENT AMENDMENTS
FOR CHAPTERS 16 THROUGH 23

The review of the current amendments was tabled until the June meeting.

Note: These minutes are not intended to be a verbatim transcript but are intended to record the significant features of the business conducted in this meeting. Discussed items are not necessarily shown in the chronological order they occurred.

Determination to Hold Meeting Without an Anchor Location

Public Body:

Structural Advisory Committee

Chair Name:

Michael Buehner

Public Meeting date or date range:

June 3, 2021

The public meeting(s) scheduled for the date(s) above will be conducted electronically and without an anchor location. I have determined meeting with an anchor location presents a substantial risk to the health and safety of those who may be present at the anchor location.

This determination was based on the following facts/information:

The public monitoring and participation requirements in Utah Code Title 52, Ch. 4, Open and Public Meetings Act, would gather the participants and interested persons in this public meeting in a single, confined location, where the risks of further transmission of COVID-19 are greater. At the time that this meeting is being scheduled, Salt Lake County is currently in the "Moderate Level of Transmission" phase, according to the Utah COVID-19 Transmission Index. In addition, the Heber M Wells Building remains closed to the general public as a precaution to prevent the spread of COVID-19.

15A-3-107 Amendments to Chapter 16 of IBC.

- (1) In IBC, Table 1604.5, Risk Category III, in the sentence that begins "Group I-2 Condition 1," a new footnote c is added as follows: "c. Type II Assisted Living Facilities that are I-2 Condition 1 occupancy classifications in accordance with Section 308 shall be Risk Category II in this table."
- (2) In IBC, Section 1605.2, in the portion of the definition for the value of f_2 , the words "and 0.2 for other roof configurations" are deleted and replaced with the following: " $f_2 = 0.20 + .025(A-5)$ for other configurations where roof snow load exceeds 30 psf; $f_2 = 0$ for roof snow loads of 30 psf (1.44kN/m²) or less. Utah Code Page 61 Where A = Elevation above sea level at the location of the structure (ft./1,000)."
- (3) In IBC, Sections 1605.3.1 and 1605.3.2, exception 2 in each section is deleted and replaced with the following: "2. Flat roof snow loads of 30 pounds per square foot (1.44 kNm²) or less need not be combined with seismic loads. Where flat roof snow loads exceed 30 pounds per square foot (1.44 kNm²), the snow loads may be reduced in accordance with the following in load combinations including both snow and seismic loads. S as calculated below, shall be combined with seismic loads.
$$S = (0.20 + 0.025(A-5))P_f$$
 is greater than or equal to 0.20 P_f .
Where:
S = Weight of snow to be used in combination with seismic loads
A = Elevation above sea level at the location of the structure (ft./1,000)
 P_f = Design roof snow load, psf.
For the purpose of this section, snow load shall be assumed uniform on the roof footprint without including the effects of drift or sliding. The Importance Factor, I, used in calculating P_f may be considered 1.0 for use in the formula for W_s ".
- (4) IBC, Section 1608.1, is deleted and replaced with the following: "1608.1 General. Except as modified in Sections 1608.1.1, 1608.1.2, and 1608.1.3, design snow loads shall be determined in accordance with Chapter 7 of ASCE 7, but the design roof load shall not be less than that determined by Section 1607. Where the minimum live load, in accordance with Section 1607, is greater than the design roof snow load, p_f , the live load shall be used for design, but it may not be reduced to a load lower than the design roof snow load. Drifting need not be considered for roof snow loads, p_f , less than 20 psf."
- (5) A new IBC, Section 1608.1.1, is added as follows: "1608.1.1 Ice dams and icicles along eaves. Section 7.4.5 of Chapter 7 of ASCE 7 referenced in IBC Section 1608.1 is deleted and replaced with the following: 7.4.5 Ice Dams and Icicles Along Eaves. Where ground snow loads exceed 75 psf, eaves shall be capable of sustaining a uniformly distributed load of $2p_f$ on all overhanging portions. No other loads except dead loads shall be present on the roof when this uniformly distributed load is applied. All building exits under down-slope eaves shall be protected from sliding snow and ice."
- (6) A new IBC, Section 1608.1.2, is added as follows: "1608.1.2 Thermal factor. The value for the thermal factor, C_t , used in calculation of p_f shall be determined from Table 7.3-2 in

ASCE 7. Exception: Except for unheated structures, the value of C_t need not exceed 1.0 when ground snow load, p_g , is calculated using Section 1608.2.1."

- (7) A new IBC, Section 1608.1.3 is added as follows: "1608.1.3 Drifts on adjacent structures. Section 7.7.2 of ASCE 7 referenced in IBC, Section 1608.1, is deleted and replaced with the following: 7.7.2 Adjacent structures. At lower adjacent structures, the requirements of Section 7.7.1 shall be used to calculate windward and leeward drifts. The resulting drift is permitted to be truncated."
- (8) A new IBC, Section 1608.2.1 is added as follows: "1608.2.1 Utah ground snow loads. Section 7.2 of ASCE 7 referenced in IBC, Section 1608.1 is modified as follows:
- (a) In paragraph 1, 7.2-8 is deleted and replaced with 7.2-9.
 - (b) On Figure 7.2-1, remove CS and other ground snow load values in the state of Utah. Add red shaded region for the state of Utah with the following note: See note for Utah.
 - (c) The following is added to the Note on Figure 7.2.1: See Table 7.2-9 for Utah.
 - (d) Add Table 7-2.9 as follows:

TABLE 7.2-9

GROUND SNOW LOADS FOR SELECTED LOCATIONS IN UTAH

City/Town	County	Ground Snow Load (lb/ft ²)	Elevation (ft)
Beaver	Beaver	35	5886
Brigham City	Box Elder	42	4423
Castle Dale	Emery	32	5669
Coalville	Summit	57	5581
Duchesne	Duchesne	39	5508
Farmington	Davis	35	4318
Fillmore	Millard	30	5138
Heber City	Wasatch	60	5604
Junction	Piute	27	6030
Kanab	Kane	25	4964
Loa	Wayne	37	7060
Logan	Cache	43	4531
Manila	Daggett	26	6368
Manti	Sanpete	37	5620
Moab	Grand	21	4029
Monticello	San Juan	67	7064
Morgan	Morgan	52	5062
Nephi	Juab	39	5131
Ogden	Weber	37	4334
Panguitch	Garfield	41	6630
Parowan	Iron	32	6007
Price	Carbon	31	5558
Provo	Utah	31	4541
Randolph	Rich	50	6286
Richfield	Sevier	27	5338
St. George	Washington	21	2585

Salt Lake City	Salt Lake	28	4239
Tooele	Tooele	35	5029
Vernal	Uintah	39	5384

Note: To convert lb/ft² to kN/m², multiply by 0.0479. To convert feet to meters, multiply by 0.3048. Utah Code Page 63

1. Statutory requirements of the Authority Having Jurisdiction are not included in this state ground snow load table.
 2. For locations where there is substantial change in altitude over the city/town, the load applies at and below the cited elevation, with a tolerance of 100 ft (30 m).
 3. For other locations in Utah, see Bean, B., Maguire, M., Sun, Y. (2018), "The Utah Snow Load Study," Utah State University Civil and Environmental Engineering Faculty Publications, Paper 3589, <http://utahsnowload.usu.edu/>, for ground snow load values.
- (9) A new IBC, Section 1613.1.1, is added as follows: "1613.1.1 Effective Seismic Weight. In ASCE 12.7.2 and 12.14.8.1 as referenced in Section 1613.1, Definition of W, Item 4 is deleted and replaced with the following:
4. Where flat roof snow load, P_f , exceeds 30 psf, the snow load included in the effective seismic weight shall be calculated, in accordance with the following equation: $W_s = (0.20 + 0.025(A-5))P_f \geq 0.20 P_f$.
- WHERE:
- W_s = Weight of snow to be included as effective seismic weight
 A = Elevation above sea level at the location of the structure (ft./1,000)
 P_f = Design roof snow load, psf.
- For the purposes of this section, snow load shall be assumed uniform on the roof footprint without including the effects of drift or sliding. The Importance Factor, I , used in calculating P_f may be considered 1.0 for use in the formula for W_s ."

Amended by Chapter 20, 2019 General Session

15A-3-108 Amendments to Chapters 17 through 19 of IBC.

- (1) A new IBC, Section 1807.1.6.4, is added as follows: "1807.1.6.4 Empirical concrete foundation design. Group R, Division 3 Occupancies three stories or less in height, and Group U Occupancies, which are constructed in accordance with Section 2308, or with other methods employing repetitive wood-frame construction or repetitive cold-formed steel structural member construction, shall be permitted to have concrete foundations constructed in accordance with Table 1807.1.6.4."
- (2) A new IBC, Table 1807.1.6.4 is added as follows:

"TABLE 1807.1.6.4 EMPIRICAL FOUNDATION WALLS (1,7,8)

Max. Height	Top Edge Support	Min. Thickness	Vertical Steel (2)	Horizontal Steel (3)	Steel at Openings (4)	Max. Lintel Length	Min. Lintel Length
2'(610 mm)	None	6"	(5)	2- #4 Bars	2- #4 Bars above 1-#4 Bar each side 1-#4 Bar below	2'(610 mm)	2" for each foot of opening width; min. 6"
3'(914 mm)	None	6"	# 4@32"	3- #4 Bars	2- #4 Bars above 1- #4 Bar each side 1- #4 Bar below	2'(610 mm)	2" for each foot of opening width; min. 6"
4'(1,219 mm)	None	6"	#4@32"	4- #4 Bars	2- #4 Bars above 1- #4 Bar each side 1- #4 Bar below	3'(914 mm)	2" for each foot of opening width; min 6"
6' (1,829 mm)	Floor or roof Diaphragm (6)	8"	#4@24"	5-#4 Bars	2- #4 Bars above 1- #4 Bar each side 1- #4 Bar below	6'(1,829 mm)	2" for each foot of opening width; min. 6"
8'(2,438 mm)	Floor of roof Diaphragm (6)	8"	#4@24"	6- #4 Bars	2- #4 Bars above 1- #4 Bar each side 1- #4 Bar below	6'(1,829 mm)	2" for each foot of opening width; min. 6"
9' (2,743 mm)	Floor of roof Diaphragm (6)	8"	#4@16"	7-#4 Bars	2- #4 Bars above 1- #4 Bar each side 1- #4 Bar below	6'(1,829 mm)	2" for each foot of opening width; min. 6"

Over 9'(2,743 mm), Engineering required for each column
Footnotes:

- (1) Based on 3,000 psi (20.6 Mpa) concrete and 60,000 psi (414 Mpa) reinforcing steel.
- (2) To be placed in the center of the wall, and extended from the footing to within three inches (76 mm) of the top of the wall; dowels of #4 bars to match vertical steel placement shall be provided in the footing, extending 24 inches (610 mm) into the foundation wall.
- (3) One bar shall be located in the top four inches (102 mm), one bar in the bottom four inches (102 mm) and the other bars equally spaced between. Such bar placement satisfies the requirements of Section 1805.9. Corner reinforcing shall be provided so as to lap 24 inches (610 mm).
- (4) Bars shall be placed within two inches (51 mm) of the openings and extend 24 inches (610 mm) beyond the edge of the opening; vertical bars may terminate three inches (76 mm) from the top of the concrete.
- (5) Dowels of #4 bar at 32 inches on center shall be provided in the footing, extending 18 inches (457 mm) into the foundation wall. Utah Code Page 65
- (6) Diaphragm shall conform to the requirements of Section 2308.
- (7) Footing shall be a minimum of nine inches thick by 20 inches wide.
- (8) Soil backfill shall be soil classification types GW, GP, SW, or SP, per Table 1610.1. Soil shall not be submerged or saturated in groundwater."
- (3) A new IBC, Section 1905.1.9, is added as follows: "1905.1.9 ACI 318, Table 4.2.1." Modify ACI 318, Table 19.3.1.1 to read as follows: In the portion of the table designated as "Conditions", the following Exposure category and class is deleted and replaced with the following: "F0: Concrete elements not exposed to freezing and thawing cycles to include footing and foundation elements that are completely buried in soil."

Amended by Chapter 249, 2016 General Session

15A-3-109 Amendments to Chapters 20 through 22 of IBC.

IBC, Chapters 20 through 22 are not amended.

Enacted by Chapter 14, 2011 General Session

15A-3-110 Amendments to Chapters 23 through 25 of IBC.

- (1) A new IBC, Section 2306.1.5, is added as follows: "2306.1.5 Load duration factors. The allowable stress increase of 1.15 for snow load, shown in Table 2.3.2, Frequently Used Load Duration Factors, Cd, of the National Design Specifications, shall not be utilized at elevations above 5,000 feet (1,524 M)."
- (2) In IBC, Section 2308.3.1, the words "6 feet (1829 mm)" and "4 feet (1219 mm)" are deleted and each replaced with the words "32 inches."

Amended by Chapter 20, 2019 General Session

15A-3-111 Amendments to Chapters 26 through 28 of IBC

IBC, Chapters 26 through 28 are not amended.

Enacted by Chapter 14, 2011 General Session

15A-3-112 Amendments to Chapters 29 through 31 of IBC. (

-)1) In IBC [P] Table 2902.1 the following changes are made:

- (a) In the row for "E" occupancy in the field for "OTHER" a new footnote i is added.
 - (b) In the row for "I-4" occupancy in the field for "OTHER" a new footnote i is added.
 - (c) A new footnote h is added as follows: "FOOTNOTE: g. When provided, subject to footnote i, in public toilet facilities there shall be an equal number of diaper changing facilities in male toilet rooms and female toilet rooms."
 - (d) A new footnote h is added to the table as follows: "FOOTNOTE h: Non-residential child care facilities shall comply with additional sink requirements of Utah Administrative Code, R381-60-9, Hourly Child Care Centers, R381-70-9, Out of School Time Child Care Programs, and R381-100-9, Child Care Centers."
 - (e) A new footnote i is added to the table as follows: "FOOTNOTE i: A building owned by a state government entity or by a political subdivision of the state that allows access to the public shall provide diaper changing facilities in accordance with footnote h if:
 - 1. the building is newly constructed; or
 - 2. a bathroom in the building is renovated."
 - (f) Footnote f is deleted and replaced with the following: "FOOTNOTE f: The required number and type of plumbing fixtures for outdoor public swimming pools shall be in accordance with Utah Administrative Code, R392-302, Design, Construction and Operation of Public Pools."
 - (2) A new IBC, Section [P]2902.7, is added as follows:

"[P]2902.7 Toilet Facilities for Workers. Toilet facilities shall be provided for construction workers and such facilities shall be maintained in a sanitary condition. Construction worker toilet facilities of the nonsewer type shall conform to ANSI Z4.3."
 - (3) IBC, Section 3001.2, is deleted.
 - (4) In IBC, Section 3006.5, a new exception is added as follows: "Exception: Hydraulic elevators and roped hydraulic elevators with a rise of 50 feet or less."
 - (5) In IBC, Section 3109.1, the words "the International Swimming Pool and Spa Code" at the end of the section are deleted and replaced with the words "Utah Administrative Code, R392-302, Design, Construction and Operation of Public Pools."
- Amended by Chapter 441, 2020 General Session

Superseded 7/1/2021

15A-3-113 Amendments to Chapters 32 through 35 of IBC.

In IBC, Chapter 35, the referenced standard ICCA117.1-09, Section 606.2, Exception 1 is modified to include the following sentence at the end of the exception:
"The minimum clear floor space shall be centered on the sink assembly."

Amended by Chapter 20, 2019 General Session

Effective 7/1/2021

15A-3-113 Amendments to Chapters 32 through 35 of IBC.

- (1) In IBC, Chapter 35, the referenced standard for NFPA 70-17 is deleted and replaced with NFPA 70-20.

- (2) In IBC, Chapter 35, the referenced standard ICCA117.1-09, Section 606.2, Exception 1 is modified to include the following sentence at the end of the exception:
"The minimum clear floor space shall be centered on the sink assembly."

Amended by Chapter 199, 2021 General Session